

**REGULATION 12**  
**MISCELLANEOUS STANDARDS OF PERFORMANCE**  
**RULE 11**  
**FLARE MONITORING AT PETROLEUM REFINERIES**

**12-11-100 GENERAL**

- 12-11-101 Description:** The purpose of this rule is to require monitoring and recording of emission data for flares at petroleum refineries.
- 12-11-110 Exemption, Organic Liquid Storage & Distribution:** [Would exempt flares used as abatement devices for storage tanks subject to the BAAQMD storage tank rule or for loading racks subject to BAAQMD fuel distribution rules.]
- 12-11-111 Exemption, Marine Vessel Loading Terminals:** [Would exempt flares used as abatement devices for marine loading terminals subject to BAAQMD marine loading rule.]
- 12-11-112 Exemption, Thermal Oxidizers:** [Would exempt thermal oxidizers used as abatement devices to comply with District, State, or federal rules.]
- 12-11-113 Limited Exemption, Pilot and Purge Gas Reporting:** [Would require a one-time report for a flare for which pilot and purge gas flow is constant as a result of flare design and would exempt flare from monthly pilot and purge gas reporting normally required by Section 12-11-401.]

**12-11-200 DEFINITIONS**

[The rule would define the following terms and any others for which a definition is needed.]

- 12-11-201 Flare:**  
**12-11-202 Flaring:**  
**12-11-203 Gas:**  
**12-11-204 Petroleum Refinery:**  
**12-11-205 Pilot Gas:**  
**12-11-206 Purge Gas:**  
**12-11-207 Sulfur Recovery Plant:**  
**12-11-208 Vent Gas:**

**12-11-400 ADMINISTRATIVE REQUIREMENTS**

- 12-11-401 Flare Data Reporting Requirements:** [Would require a monthly report that includes the following:
1. Total vent gas flow for each day and for the month, and, once ultrasonic monitors are installed as required in Section 12-11-501, for each hour of the month.
  2. Vent gas hydrocarbon, methane, and sulfur content as determined by the methods required in Section 12-11-502.
  3. Pilot and purge gas flow for each day and for the month.
  4. Estimated hydrocarbon, methane, and sulfur emissions in pounds from each flare, including those from pilot and purge gas combustion.
  5. A description flaring events including cause, time, duration, source, responsive measures.
  6. Flare monitoring downtime with explanations.]

**12-11-402 Flow Verification Report:** [Would require submission of a semi-annual report comparing flow as measured by ultrasonic monitors to flow as determined by other means listed in Section 12-11-602 in order to validate flow monitor data.]

## **MONITORING AND RECORDS**

**12-11-501 Vent Gas Flow Monitoring:** [Would require use of existing flow monitoring methods and, effective about 6 months after rule adoption, would require installation of ultrasonic flow monitors. Ability of vendors to supply flow monitors will dictate the effective date of the ultrasonic monitor requirement.]

**12-11-502 Vent Gas Composition Monitoring:**

1. [Effective soon after rule adoption, vent gas composition would have to be monitored by samples taken daily at a minimum and analyzed as required by Section 12-11-601. Refineries would have to provide access so that APCO can also take samples.]
2. [Effective about 9 months after rule adoption vent gas composition would have to be monitored using either:
  1. Manual or auto-sampling at a minimum frequency of one sample per day with an additional sample triggered whenever vent gas flow exceeds the lowest reliably detectable flow velocity for an ultrasonic monitor (about 1 foot per second). Once the trigger is exceeded, a sample would be required within 15 to 30 minutes, and further samples would be required every 3 hours until flow velocity drops below the reliable level of detection. Samples would have to be analyzed as specified in Section 12-11-601.
  2. Continuous analyzers - flame ionization detectors (FID), non-dispersive infrared detectors (NDIR), gas chromatography (GC) - that monitor vent gas composition continuously (which means at intervals that could range up to 15 minutes). Methods specified in Section 12-11-601 would have to be used.]

**12-11-503 Pilot Monitoring:** [Would require monitoring to ensure that pilot flame or arc ignition system is always available to ignite vent gas.]

**12-11-504 Pilot and Purge Gas Monitoring:** [Would require monitoring of pilot and purge gas flow using a device that measures flow or other parameters from which flow can be calculated.]

**12-11-505 Recordkeeping Requirements:** [Would require record retention of 5 years except for video monitoring – see below.]

**12-11-506 General Monitoring Requirements:** [Would require reporting of monitor downtime exceeding 24 hours by the next day; would allow monitor downtime not to exceed 15 consecutive days or 30 days in a year, consistent with District and EPA policy; would require sampling if continuous vent gas composition analyzers are inoperative; would require proper monitor calibration; would specify requirements for data recorders.]

**12-11-507 Video Monitoring:** [Two possible options follow:]

[Option 1: Would require making flare images available over the internet:

The owner or operator of a flare subject to this rule shall maintain equipment that captures a real-time image of the flare and flame and makes the image available to the World Wide Web. The image of the flare shall be of sufficient size and contrast to be readily apparent in the overall image or frame.

Note: this option would have to be accompanied by an exemption that ensures that it is not a violation if a refinery's internet service provider is down; if there is an internet disruption; if a computer user attempting to access a flare site has a bandwidth problem, an internet service problem, a hardware problem, a software problem, a compatibility problem, etc.]

[Option 2: Would require recording the image to allow complaint verification:

The owner or operator of a flare subject to this rule shall maintain equipment that records a real-time image of the flare and flame. The image of the flare shall be of sufficient size and contrast to be readily apparent in the overall image or frame. The equipment shall archive the images for each 24-hour period, and the owner or operator of the a flare shall retain each 24-hour archive for no less than 72 hours.]

## **12-11-600 MANUAL OF PROCEDURES**

### **12-11-601 Testing, Sampling, and Analytical Methods:**

1. [Specifies total hydrocarbon, methane, and sulfur analytical methods to be used if samples are taken manually or with an auto-sampler.]
2. [Specifies total hydrocarbon, methane, and sulfur monitoring methods to be used if continuous monitors are used.]
3. [Specifies total hydrocarbon, methane, and sulfur analytical methods and sampling frequency to be used if gas chromatography is used for continuous monitoring.]

**12-11-602 Flow Verification Test Methods:** [Would list several ways of validating readings from the ultrasonic flow monitors.]